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Overcoming Obstacles to Innovative State Regulatory Programs



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Abstract <p>Under the existing federal approach to environmental protection,the Environmental Protection Agency (EPA),pursuant to statutes such as the Clean Air Act and Clean Water Act,prescribes regulations with which states,localities,and private companies must comply.The approach has been widely criticized in recent years for being costly,inflexible,and ineffective in addressing some of the nation s most pressing environmental problems.For example,the National Academy of Public Administration recently concluded that although traditional regulatory approaches can keep most forms of industrial pollution in check,they cannot reach many other sources of pollution and environmental degradation,such as diffuse sources of water pollution from urban and agricultural runoff.Even where existing approaches have succeeded in curtailing pollution from major industrial sources,they have often been costly or have provided regulated entities with little incentive to reduce pollution below mandatory compliance levels.</p>		
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United States General Accounting Office
Washington, D.C. 20548

January 31, 2002

The Honorable Sherwood Boehlert
The Honorable Cal Dooley
The Honorable James Greenwood
House of Representatives

Under the existing federal approach to environmental protection, the Environmental Protection Agency (EPA), pursuant to statutes such as the Clean Air Act and Clean Water Act, prescribes regulations with which states, localities, and private companies must comply. The approach has been widely criticized in recent years for being costly, inflexible, and ineffective in addressing some of the nation's most pressing environmental problems. For example, the National Academy of Public Administration recently concluded that although traditional regulatory approaches can keep most forms of industrial pollution in check, they cannot reach many other sources of pollution and environmental degradation, such as diffuse sources of water pollution from urban and agricultural runoff. Even where existing approaches have succeeded in curtailing pollution from major industrial sources, they have often been costly or have provided regulated entities with little incentive to reduce pollution below mandatory compliance levels.

EPA responded to such concerns during the 1990s with a variety of initiatives intended to encourage innovative regulatory strategies that could streamline environmental requirements while encouraging more effective means of protecting the environment. Among the agency's "flagship" programs was Project XL, which encouraged individual regulated facilities to propose projects to EPA that would test whether alternative approaches could achieve compliance at lower cost and produce greater environmental benefits.

Many sponsors of innovation, however, have expressed disappointment over the effectiveness of Project XL and similar initiatives intended to encourage creative improvements in environmental regulation. Some have also contended that the states could be key to a more effective and efficient approach to environmental policy. Citing states' closer proximity to environmental problems and central role in enforcing federal regulation, they have advocated that EPA show greater flexibility in allowing states to pursue innovative environmental regulatory approaches. Others, however, have cautioned that unless these alternative approaches are carefully designed, they could impair EPA's ability to achieve protection of human

health and the environment—the ultimate purpose of the programs—and may not be permissible under federal environmental statutes.

As agreed with your offices, this report identifies (1) the major avenues that states have utilized to obtain EPA's approval of innovative approaches to environmental protection and (2) the major obstacles that impede states from pursuing innovative approaches needing EPA's concurrence. The report also discusses EPA's recent efforts to facilitate innovative approaches to environmental protection. To address these issues, we sought detailed information from a diverse group of 15 states on their experiences in pursuing innovation. In selecting these states, we sought variation in size, location among EPA's 10 geographic regions, and the degree of their participation in environmental regulatory innovation.¹ Among other steps, we conducted detailed, structured interviews with environmental officials from these states, and analyzed in detail 20 initiatives they cited as being among the key initiatives they have pursued.² We also interviewed officials in the corresponding eight EPA regional offices and at EPA's headquarters, and obtained from them pertinent EPA-state agreements and guidance documents. A more detailed explanation of our scope and methodology is included at the end of this report.

Results in Brief

The states have utilized several avenues to obtain approval from EPA for innovative approaches to environmental protection. Among the primary approaches cited by the state environmental officials we interviewed are EPA's Project XL and the Joint EPA/State Agreement to Pursue Regulatory Innovation. Although most proposals were submitted by private facilities, EPA's Project XL has been used by several states to pursue state-led initiatives. Seven of the 15 states we contacted either initiated XL projects on their own or worked closely with other entities (e.g., private companies or municipalities) that had formally proposed the project to EPA. In 1998, in response to states' desire for a more timely and flexible process, the Environmental Council of the States (the national, non-profit association of state and territorial environmental commissioners) and EPA entered into

¹The 15 states are Georgia, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, and Wisconsin.

²Of the 15 states we contacted, 9 identified two initiatives each, 2 identified one initiative, and 4 did not identify any initiatives.

the Joint EPA/State Agreement to Pursue Regulatory Innovation. The agreement established a framework under which states can submit proposals and gives specific timelines for EPA to respond to them. As of January 2002, 15 states had submitted 45 proposals. Of these, EPA accepted 20 proposals and is considering 22, while the remaining 3 have been withdrawn or denied. States have also used several other formal and informal avenues to pursue innovation with EPA.

Officials in most of the states we contacted told us that they faced significant challenges before they were in a position to submit proposals to EPA, including resistance from within the state environmental agency and a lack of adequate resources to pursue innovative approaches. But while obstacles at the state level played an important role, environmental officials from 12 of the 15 states said that federal obstacles—including the need to comply with detailed EPA regulations, policies, and guidance, as well as a perceived cultural resistance to change among EPA staff—were more significant. Of particular note, state officials ranked the detailed federal regulatory requirements governing implementation of specific programs as a significant obstacle in 12 of 20 initiatives. This is largely because regulations are legally binding and tend to be more detailed and prescriptive than the statutes they are designed to implement. States also cited as a significant obstacle a cultural resistance among many in EPA toward alternative approaches—a resistance that, they maintained, often manifested itself in a lengthy and costly EPA review of their proposals. EPA officials noted, however, that this cultural resistance is often rooted in a concern that strict application of regulations is needed to reduce the risk of lawsuits filed by private interest groups.

EPA has recognized the need to improve its strategy to encourage innovative environmental approaches by states and other entities. Toward this end, the agency has (1) issued a broad-based draft strategy on Innovating for Better Environmental Results and (2) adopted the recommendations of an internal Task Force on Improving EPA Regulations which, among other things, advocates the consideration of innovative alternatives as new regulations are developed. Yet, however successful these efforts may be in alleviating the impact of *new* regulations on innovation, they still do not resolve the key problem we and other organizations have documented concerning the impact of many *existing* prescriptive regulations. Current legislation does not contain explicit language authorizing the use of innovative environmental approaches in lieu of specific regulatory requirements, and the absence of this “safe legal harbor” for EPA has been a significant obstacle to states and others in their

efforts to test innovative proposals. It has also tended to reinforce the cultural resistance to innovation that EPA is seeking to change. Accordingly, in the absence of legislative changes providing EPA such authority, the effectiveness of the agency's innovation efforts will warrant monitoring by EPA and other stakeholders in the innovations process, and will also warrant continued congressional attention.

Background

Federal environmental policy is shaped by numerous federal statutes, including The Clean Air Act, The Clean Water Act, and The Resource Conservation and Recovery Act. These laws charge EPA with protecting the environment through such activities as setting standards for air and water quality, issuing permits, and taking enforcement actions. The laws also allow states to assume many of these responsibilities. As states' responsibilities have grown, they have applied for and received the lead role in performing these activities. Consequently, the operational responsibility for most of EPA's major programs currently lies with the states, and EPA routinely relies on states to implement the full range of environmental responsibilities associated with these programs.

In recent years, a number of organizations have emphasized the need to supplement or significantly modify the existing prescriptive, command-and-control approach toward environmental protection established under current federal laws. For example, in 1998, Resources for the Future (an environmental policy research organization) noted that while the current federal approach has many noteworthy achievements, it is also flawed in several respects.³ It noted in particular that federal laws and regulations tend to prescribe the specific means by which environmental goals will be reached, rather than establishing goals and allowing states and facilities the flexibility to reach those goals. GAO has also reported on these matters in recent years, focusing in particular on EPA's efforts to "reinvent" environmental regulation.⁴ EPA has also recognized the need for new approaches in numerous publications and in its interactions with state governments and other parties.

³*Pollution Control in the United States: Evaluating the System*. Davies, J. Clarence and Jan Mazurek, Resources for the Future, Washington, D.C.

⁴These reports include *Environmental Protection: Challenges Facing EPA's Efforts to Reinvent Environmental Regulation* (GAO/RCED-97-155, July 2, 1997) and *Environmental Protection: Collaborative EPA-State Effort Needed to Improve New Performance Partnership System* (GAO/RCED-99-171, June 21, 1999).

The Congress has recently considered giving EPA explicit authority to allow more flexible approaches by states and others. One such proposal, the Second Generation of Environmental Improvement Act of 1999 (HR 3448), introduced in the 106th Congress, would have allowed EPA to enter into innovative strategy agreements with states, companies, or other interested parties in order to experiment with ways to achieve environmental standards more efficiently and effectively. Such agreements could have involved the modification or waiver of existing agency regulations. The bill was not enacted and has thus far not been reintroduced in the 107th Congress.

States Have Used Several Key Avenues to Promote Innovative Environmental Approaches

In recent years, states have worked with EPA through several key avenues to pursue innovative environmental approaches. Seven of the 15 states we contacted have used EPA's Project XL as such a vehicle, even though the projects in which they are involved were formally proposed to EPA by a private company. Partly as a result of states' dissatisfaction with Project XL, however, EPA and the Environmental Council of the States (ECOS) agreed in 1998 to a process in which, among other things, states submit innovative projects through their respective EPA regional offices and EPA is provided timelines within which it must respond. In addition to these two major avenues, states have also pursued alternative approaches to environmental protection through the use of the National Environmental Performance Partnership System (NEPPS), by participating in programs developed through EPA's media offices and by negotiating relatively narrow changes in their day-to-day working relationship with EPA.

EPA's Project XL

Project XL, which stands for "excellence" and "leadership," was launched in 1995 as part of the previous administration's broad effort to reinvent federal environmental protection policy. Based on recognition of the need for new approaches to environmental regulation, Project XL was designed to allow private businesses, as well as states and local governments, to test innovative ideas to enhance environmental protection.⁵ In exchange for improved performance, participants would be given the flexibility to explore new approaches to environmental protection.

To participate in Project XL, businesses, states, and other government agencies submit proposals to EPA, which then evaluates proposals according to specific criteria and other considerations. EPA requires that, among other things, Project XL participants demonstrate that their

proposals will result in “superior environmental performance,” and include a system for monitoring and a process for stakeholder involvement. XL projects should also be designed to test innovative approaches that are transferable to other facilities.

Although most of the more than 50 XL projects approved to date were submitted by private facilities, some federal and local government agencies have submitted proposals as well. In addition, four states have submitted proposals designed to apply to multiple facilities within the states. Massachusetts’ Environmental Results Program, for example, covers the dry cleaning, photo processing, and printing sectors. Table 1 describes each of the state-initiated projects that cover multiple facilities or entire industry sectors.

⁵Project XL was in part inspired by the example of the Amoco Oil Company’s refinery in Yorktown, Virginia. At that facility, extensive emissions testing revealed that the large majority of benzene emissions came from the unregulated terminal loading facility, rather than the other sources for which EPA had mandated specific and costly technological controls. Even though all parties agreed that controlling emissions at the loading dock was preferable to the more expensive controls mandated for other sources at the refinery, the company could not substitute this preferred alternative for the more expensive controls because specific federal regulations required these controls.

Table 1: State-Proposed Project XL Initiatives

State's Project XL proposal	Project's objectives
Massachusetts Environmental Results Program	The goal of this program is to streamline permitting and reporting processes and to improve environmental performance for the dry cleaning, photo processing, and printing industries. The program seeks to eliminate the need to issue facility-specific permits to thousands of facilities through the establishment of industry-wide performance standards. The program further requires participating firms to document compliance through annual self-certification. In addition, it offers flexibility and compliance assistance to facilities. This, in turn, should improve performance and result in resource savings for both the industry and the Massachusetts Department of Environmental Protection.
New Jersey Gold Track Program	The Gold Track Program is part of a tiered system designed to reward companies that commit to higher levels of environmental performance than is required by current regulations. While existing regulatory requirements may not encourage facilities to go beyond baseline compliance, facilities under the Gold Track program obtain recognition and regulatory flexibility in exchange for a commitment to go beyond basic regulatory requirements. These improvements are to be demonstrated in various ways, including adoption of environmental management systems and the use of increasingly stringent facility-wide air emission caps. Currently, Gold Track is limited to nine facilities. Facilities may also participate in the Silver or Silver II Tracks, which offer less flexibility for a less rigorous commitment to environmental protection. However, these tracks are not included in Project XL.
New York Hazardous Waste Storage for Public Utilities	Under the Resource Conservation and Recovery Act, when generators of hazardous waste move the waste from its source, they normally must transport it only to permitted treatment, storage, and disposal facilities (TSDF). Under this Project XL agreement, however, public utilities in New York State will be able to consolidate the waste from various locations at a central collection facility where they can store it for up to 90 days before transporting it to a permitted TSDF. This proposal is intended to allow facilities to make fewer trips to TSDFs; increase public safety by facilitating removal of hazardous waste and decreasing the risk of accidental release; increase efficiency of transportation of hazardous wastes for public utilities; and save time and resources for public utilities and the New York Department of Environmental Conservation.
Pennsylvania Coal Remining and Reclamation Project	This project is designed to encourage coal operators to remine and reclaim abandoned coal mine sites. Under current Clean Water Act regulations, operators must meet numeric limits under a water discharge permit at individual discharge points. Operators may be reluctant to engage in remining activities because they may exceed these limits due to pre-existing discharges from closed mines. In contrast, under this agreement, operators do not have to meet the limits at each individual discharge point, but instead can use "Best Management Practices" and monitor the overall concentration of pollutants in-stream. This is expected to reduce risk and expense to coal mine operators, improve overall water quality, and increase the number of operators participating in remining and reclamation activities.

While not initiating specific Project XL proposals, 7 of the 15 states we contacted have participated by working on initiatives that were formally proposed to EPA under Project XL by private companies. For example, even before the establishment of Project XL, the Minnesota Pollution Control Agency had been working with the 3M Company to develop alternative compliance approaches, which it subsequently pursued under

the auspices of Project XL. More recently, Minnesota has actively worked with the Andersen Windows Corporation on a proposal to reduce air emissions from a facility in Bayport, Minnesota, in exchange for regulatory flexibility. Similarly, Virginia played an active role in advocating an innovative approach to controlling air emissions proposed by Merck Pharmaceuticals for their facility in Stonewall, Virginia.

Joint EPA/State Agreement to Pursue Regulatory Innovation

In 1998, EPA and ECOS agreed to encourage experimentation by states with new approaches to environmental protection through their Joint EPA/State Agreement to Pursue Regulatory Innovation. In part, this agreement grew out of the states' frustration with other avenues for pursuing innovation, such as Project XL. Specifically, states were frustrated with Project XL's requirement that sponsors document a proposal's ability to achieve "superior environmental performance."⁶ Many believed that such a requirement was too stringent and precluded worthwhile projects that would deliver environmental results equivalent to existing regulations but more efficiently. States also believed that the process of submitting a Project XL proposal and receiving EPA's approval was too time-consuming.

In response to these concerns, the ECOS/EPA agreement outlined a process by which states could submit innovative projects through the EPA regional offices and provided timelines during which EPA must provide a response. Specifically, once a state submits a proposal to EPA, the agency has 4 weeks to reply to the state with a list of questions and concerns. Within 90 days of receipt of the initial proposal, EPA must issue a final response to the state. According to the EPA regional officials we interviewed, states do not often hold EPA strictly to these deadlines. Nonetheless, state officials told us that the time limit is sometimes helpful in obtaining a timely EPA response when necessary. In addition, the agreement omits Project XL's requirement for "superior environmental performance." Instead, it only requires that innovations seek more efficient and/or effective ways of protecting the environment.

⁶In the first years of Project XL, EPA defined "superior environmental performance" as "environmental performance that is superior to what would be achieved through compliance with current and reasonably anticipated future regulations". Because different Project XL participants often interpreted this definition differently, EPA issued clarifying guidance in 1997. Nonetheless, what constitutes "superior environmental performance" has remained a point of contention in some Project XL initiatives.

The agreement also lays out a set of principles intended to guide the development and implementation of innovations. Specifically, it states that (1) innovation often involves experimentation that should not harm human health or the environment but may include some chance of failure; (2) innovations must seek more efficient or effective ways of meeting environmental performance goals; (3) innovations should seek creative ways to tackle environmental problems; (4) stakeholders should be involved in the development and evaluation of innovations; (5) results of innovations must be measured and analyzed; (6) innovations must be enforceable and accountable; and (7) states and EPA must work as partners to promote innovation.

State proposals submitted to EPA to date have covered a wide range of innovations. Some agreements have targeted one specific problem at an individual facility, while others have been designed to affect a large number of stakeholders or to develop a framework through which a state and EPA agree to handle innovative proposals. For example:

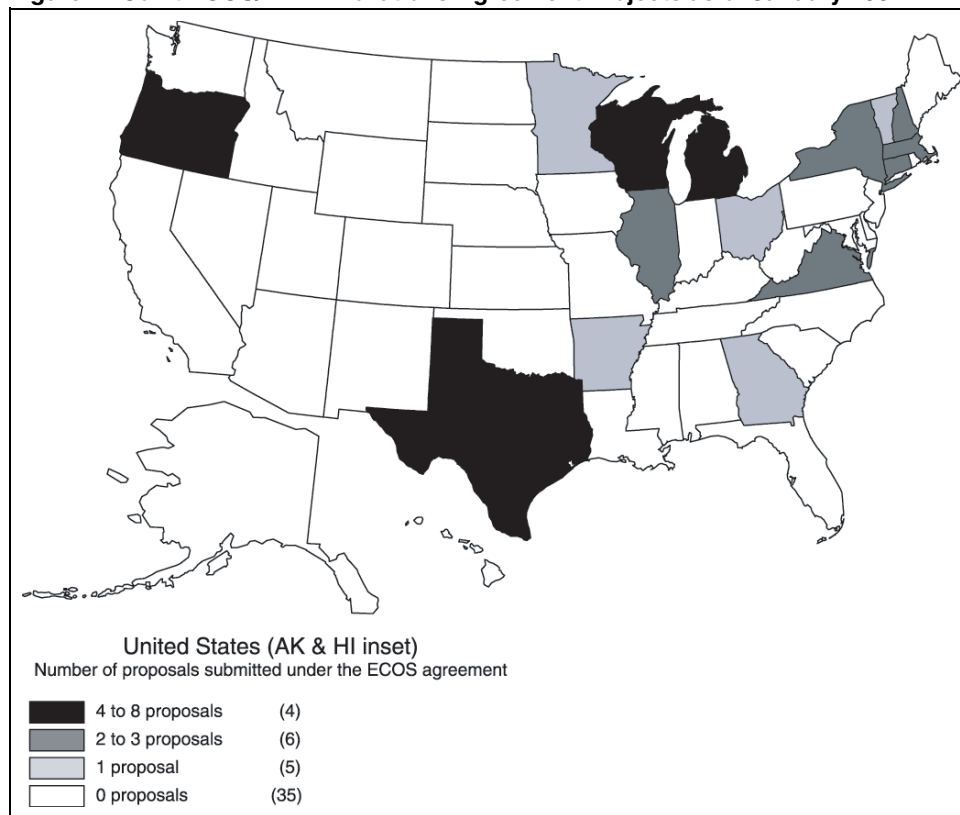
- The New Hampshire Department of Environmental Services sought flexibility under federal regulations for a single pulp and paper mill to test an innovative regulatory approach to pollution control and treatment. Under new regulations, the mill would be required to install expensive technology to control airborne methanol emissions. Under the proposal, however, the mill would use an alternative technology that would result in a four-fold reduction in methanol emissions over the current requirements while saving the company approximately \$825,000.
- In contrast, a proposal by Michigan's Department of Environmental Quality covered a much larger group of stakeholders. The proposal seeks approval for a new approach to meeting Total Maximum Daily Load (TMDL)⁷ requirements under the Clean Water Act. In particular, it would facilitate ways that point sources of pollution (e.g., an industrial facility discharging from one or more pipes) could collaborate with diffuse, "nonpoint" sources in controlling phosphorus pollution.
- Wisconsin proposed a broad framework through which the Wisconsin Department of Natural Resources and EPA would deal with multiple

⁷The TMDL program covers bodies of water that do not meet a state's water quality standards after pollution controls have been applied. Under the program, a TMDL is set based on a calculation of the amount of pollution a water body can receive and still meet the water quality standard set by the state. TMDLs allocate waste loads among the contributing sources.

innovations. Under the agreement, Wisconsin may develop up to 10 pilot projects with facilities that would test a facility-wide, “multi-media” approach to regulation (i.e., an approach that comprehensively integrates their air, water, and waste regulations) that is built around the use of an environmental management system. Facilities that commit to achieving superior environmental performance would be granted some degree of regulatory flexibility.

The number of proposals under the ECOS/EPA agreement has been fairly low to date, although participation has been growing recently. As of February 2001, 3 years after the agreement, 22 proposals had been proposed from six states in three EPA regions. As indicated in figure 1 below, by January 2002, participation had increased to 15 states, which together had proposed 45 initiatives. Of these proposals, EPA has accepted 20, another 22 are still under consideration, and 3 proposals have been denied or withdrawn. In our interviews with selected states, we discussed specific state experiences under the agreement. Of the 15 states, 10 had proposed projects under the ECOS/EPA agreement, while other states indicated that they are considering proposing projects in the future.

Figure 1: Joint ECOS/EPA Innovations Agreement Projects as of January 2002



Source: Environmental Council of the States.

Note: These figures include both proposals that have been formally submitted, as well as those in early consultation between EPA and the state.

Other Avenues

In addition to Project XL and the ECOS/EPA agreement, state and EPA officials identified several other avenues for negotiation that states have used to obtain EPA's approval for innovative environmental strategies. One is the National Environmental Performance Partnership System (NEPPS), which was established in 1995 to give states greater flexibility in setting their priorities and in the way they carry out their programs if they demonstrate the capacity and willingness to achieve mutually agreed-upon results. NEPPS provides a framework for the state's relationship with EPA, laying out the state's environmental goals and priorities, and the ways in which they will measure progress in meeting these goals. Under the system, a state agency may enter into a Performance Partnership

Agreement with its EPA regional office that typically specifies the signatories' respective roles and responsibilities in achieving specified program objectives.

While not intended to focus solely on innovation, some states have used NEPPS for this purpose. As our 1999 report⁸ on NEPPS noted, for example, Minnesota's Pollution Control Agency reorganized its traditional medium-by-medium (i.e., air, water, and waste) structure into a structure the agency believed would more effectively address problems that cross media lines. The agency used its Performance Partnership Agreement to provide the flexibility it needed to report environmental results to EPA in line with this new structure. Other states have also used their partnership agreements to achieve and document agreements on specific initiatives.

EPA has also sought to promote innovation through its program offices. For example, the Office of Solid Waste and Emergency Response has promoted cleanup and redevelopment of contaminated industrial sites by encouraging state voluntary cleanup programs. Unlike programs that rely on enforcement alone to achieve cleanups by parties responsible for the contamination, these voluntary "Brownfields" programs allow site owners and developers to collaborate on bringing sites back to productive use. EPA has encouraged the programs by providing funding to develop these programs, reviewing program adequacy, and agreeing not to take further enforcement action at these sites unless serious environmental contamination was overlooked.

Finally, EPA regional officials we interviewed mentioned that minor changes are often adopted through informal discussions during the normal course of work. They noted that more significant changes, such as those requiring a change in regulations, would have to go through one of the avenues for innovation or through the rulemaking process.

⁸*Environmental Protection: Collaborative EPA-State Effort Needed to Improve New Performance Partnership System* (GAO/RCED-99-171, June 21, 1999).

States' Innovative Proposals Face Obstacles at the State and Federal Level

While states can face significant obstacles at the state level before submitting an innovative proposal to EPA, officials in 12 of the 15 states we contacted stated their most significant obstacles are at the federal level. States cited prescriptive regulations as one of the most significant obstacles, along with an EPA culture they viewed as being averse to risk and resistant to change. EPA officials acknowledged that its culture has a tendency to resist innovative proposals, but some noted that such resistance is rooted in the agency's primary mission to ensure strict adherence to the letter of statutes and agency regulations. They also noted that some states have omitted key elements when they submit proposals, such as provisions to measure whether the innovation to be tested will have its intended effect.

Resource Constraints Are Among the Key Obstacles at the State Level

Officials in all of the states we contacted indicated that they faced significant obstacles—including lack of resources, cultural resistance in the state agency, and opposition from environmental groups—even in advance of proposing a project to EPA. In some cases, state officials cited these obstacles as reasons why the state had not yet actively pursued innovations requiring federal approval.

In discussing 20 separate initiatives, state officials cited a heavy ongoing agency workload and concomitant limited resources as obstacles to innovative approaches in 11 instances. In several instances, the state was nevertheless actively pursuing innovative approaches despite this constraint. For example, a Michigan official stated that finding sufficient resources was one of the primary difficulties faced in pursuing initiatives under the EPA/ECOS agreement. Although a considerable number of additional staff and resources were needed, the effort was given high-priority status; and therefore, agency resources were diverted to support it. Similarly, noting that 80 percent of their resources are consumed in meeting federally mandated requirements, officials from the Minnesota Pollution Control Agency said the agency's management is reluctant to divert scarce resources to innovative programs. Nonetheless, they said the agency has actively promoted Project XL initiatives and is likely to propose future initiatives under the EPA/ECOS agreement.

Officials from other states, however, said they were unable to pursue innovative approaches because of the limited resources available to meet an already-demanding workload. For example, an official of the Nebraska Department of Environmental Quality said that developing an innovative

proposal would take a considerable investment in up-front staff time and resources, and the agency's federally mandated workload exhausts all resources. Largely for this reason, Nebraska has not yet pursued any major innovative initiative requiring EPA approval. Similarly, an official of the Georgia Department of Natural Resources cited the agency's heavy mandated workload and related budget constraints as one of the two most significant obstacles to pursuing innovative approaches.

The importance of limited state agency resources as an obstacle to innovative approaches was also highlighted in an April 2000 ECOS survey.⁹ The survey asked state officials to indicate the degree to which each of 12 frequently cited impediments to innovative practices was an obstacle in their case. Six of the 29 responding states said that state agency resource limitations were the single largest obstacle they faced, while officials of 7 states indicated that this was a persistent obstacle that was difficult to address. Among the factors not related to federal policy, this factor ranked as the most significant obstacle in the survey.

A state agency's culture and working environment can also discourage innovative approaches. For 5 of the 20 specific initiatives we discussed, state officials said that an agency's culture and working environment to some extent discouraged alternative approaches to environmental policy. One state official said that obtaining EPA's permission to pursue an innovation was an abstract problem because the state agency had not been able to reach the point of submitting a proposal. He explained that internal staff resistance was the biggest problem, noting in particular that many rank-and-file managers had been with the agency for 25 to 30 years and had a professional ethic that emphasized following long-standing approaches to environmental protection. The official recalled that several years ago, the agency had examined alternative approaches to permitting, including an approach that would allow regulated facilities to certify their own compliance, and thus allow the agency to shift resources from permitting activities to enforcement activities. The division managers in the agency almost unanimously opposed this approach, fearing that it would lead to loss of control over regulated entities, a loss of funding for their own programs, and less effective environmental protection. In part because of such resistance, the agency had not recently tested EPA's receptiveness to an innovative proposal.

⁹*Perceived Barriers to Innovation in Environmental Protection*; Roberts, Robert E. and Timothy R. Titus; The Environmental Council of the States, April 2000.

Opposition to innovative approaches from environmental groups and other stakeholders has also impeded proposals. Officials in several states noted that environmental and community groups generally perceive innovative proposals as opening the door to rollback of environmental standards. A Washington state official noted that the state has a very politically active public, and some environmental and community groups perceive innovative proposals as potentially compromising the goals of environmental statutes. For example, such groups vigorously opposed the state's proposal to extend discharge permits under the Clean Water Act from 5 to 10 years because they feared the state was backing away from oversight of polluting facilities. A representative of the Texas Natural Resource Conservation Commission made similar comments, but noted that early involvement of such groups can go a long way toward mitigating their opposition. He stated that if the concerns of such groups are taken into account during the design of a proposal, their opposition later in the process is far less likely.

**Key Federal Obstacles
Include Prescriptive
Regulations and Cultural
Resistance**

State officials identified factors at the federal level, including statutes, regulations, and an EPA culture not conducive to innovation, as more significant obstacles than the factors they encountered at the state level. Specifically, officials in 12 of the 15 states we contacted said that these federal obstacles were more significant in impeding innovation than obstacles faced at the state level (such as the state agency's culture and workload, and opposition from environmental groups). The three remaining states said these two categories were about equal in their significance.

As summarized in table 2, of the federal obstacles we discussed with states, federal regulations and an EPA culture viewed as resistant to innovative approaches ranked as the two most significant obstacles affecting progress among the 20 specific initiatives identified by state officials. Our interviews, however, revealed an important relationship between the two factors. Specifically, while EPA officials acknowledged the agency's culture can be resistant to innovative proposals, some noted—and some state officials agreed—that what is often construed as “cultural resistance” is sometimes rooted in a sense of obligation among agency officials to ensure that statutes and agency regulations are properly and fully implemented. EPA officials also pointed out that in some cases state proposals lacked key elements when they were submitted, such as provisions for public involvement or a systematic means of measuring whether the innovation would have its intended effect.

Table 2: States' Rankings of Key Federal Factors Impeding Innovative Proposals

Federal factors	Number of times ranked first	Number of times ranked second	Total number of times ranked first or second
Statutes	4	2	6
Regulations	7	5	12
EPA culture	7	7	14
Other ^a	0	0	0

^a In addition to these key factors, "EPA Policies and Guidance" (generally, supplemental documents to help interpret or implement regulations) was ranked first 3 times and was ranked second 5 times. The officials also had the opportunity to identify federal factors other than those specifically listed, but did not rank any as the most or second most significant.

Statutes

An extensive literature has documented that both existing environmental statutes and environmental regulations can impede innovation. However, the manner in which the two may have this effect differs, with the more detailed, individual regulations generally having a more direct impact on proposals than the more general statutes that authorize the regulations.

The major federal environmental statutes are generally less detailed and specific, in terms of what they require or preclude, than the regulations EPA develops to implement them. There tends to be a hierarchical relationship between statutes and regulations—statutory requirements establish the broad outlines of environmental policy while regulations reflect EPA's effort to implement the statutes, and hence provide much more specific requirements on how the regulated community is to control pollution. Perhaps for this reason, the state officials we interviewed cited comparatively few instances in which an environmental statute precluded a particular innovation they were pursuing.¹⁰ Overall, environmental statutes were ranked either first or second 6 times among the 20 state innovations we examined.

¹⁰State officials cited several exceptions. A provision of the Clean Air Act was a significant impediment to the Michigan Department of Environmental Quality's effort to grant automobile parts manufacturers certain permitting flexibilities. Other state and EPA officials noted that other sections of the Clean Air Act, and various sections of the Resource Conservation and Recovery Act, also contain requirements that leave states with little flexibility and with no recourse to obtain flexibility from EPA.

However, environmental statutes have been linked with a broader, less direct impact on state environmental innovations by directing regulators and their resources toward specific, medium-by-medium activities—sometimes at the expense of alternative strategies that might more effectively address the highest environmental risks. For example, in our July 1997 report on EPA’s “reinvention” activities, we cited the difficulties in setting risk-based priorities across environmental media because each statute prescribes certain activities to deal with its own medium-specific problems.¹¹ We also cited an observation from an earlier GAO report that environmental statutes “led to the creation of individual EPA program offices that have tended to focus solely on reducing pollution within the particular environmental medium for which they have responsibility, rather than on reducing overall emissions.”¹² This “stovepipe” effect of the environmental statutory framework was cited by an EPA headquarters air official, who noted that the Clean Air Act would not recognize the value at a specific industrial site of a large reduction in water emissions in exchange for even a slight increase in air emissions—even though such a trade-off might have significant net environmental benefits in certain situations. As others have noted, however, EPA generally does consider the potential transfer of pollution from one medium to another when it develops new regulations.

Several state officials told us that federal environmental statutes can indirectly hinder innovative state approaches not only by what they include, but also by what they omit. They noted that since environmental statutes give EPA little or no explicit authority to grant regulatory flexibility to the states, the agency is placed at a higher risk when it grants a state or regulated entity permission to deviate from federal requirements. One state official cited the absence of such a “safe legal harbor” for EPA as a key impediment to state innovation.

Regulations

State officials cited regulations as a significant factor more often than statutes. In discussing 20 specific innovative proposals, state officials ranked regulations either first or second 12 times among the federal factors listed in table 2.

¹¹*Environmental Protection: Challenges Facing EPA’s Efforts to Reinvent Environmental Regulation* (GAO/RCED-97-155, July 2, 1997) p. 50.

¹²*Environmental Protection: Meeting Public Expectations With Limited Resources* (GAO/RCED-91-97, June 18, 1991).

States cited a number of instances in which regulations prescribed an approach for dealing with an environmental problem that a state believed it could more effectively address in another way. Oregon officials cited such a proposal, pursued under the state's Green Permit Program,¹³ in which the state sought to provide flexibility to a regulated facility as an incentive for improved environmental performance. The state's Department of Environmental Quality proposed to grant a semiconductor manufacturing firm expedited permit review and various other incentives in exchange for the firm's commitment to future environmental improvements through its environmental management system. As part of the application, the facility sought the approval of its system of correcting and detecting leaks in its hazardous waste piping from processes to storage tanks. According to a state official, the system's overall performance matches or exceeds federal regulatory requirements, though it does not meet certain technical specifications of regulations under the Resource, Conservation, and Recovery Act (RCRA). As a result, EPA determined that it was unable to approve that particular aspect of the facility's application. EPA did not rule out approval of this system, but stated that additional information would be required to justify it. An EPA official said that, after site visits and review of additional information provided by the facility, EPA Region 10 has concluded preliminarily that the required justification has been established. EPA and the state must now agree on a legally-enforceable alternative to the relevant RCRA requirements. EPA officials noted that the most likely approach, a site-specific rule, is a time-consuming approach that could take over 6 months. An Oregon official added that EPA is proceeding slowly on this issue both because it could set a precedent for numerous similar facilities across the nation and because the process is taxing limited regional staff resources.

The Oregon experience is comparable to experiences cited by officials in other states in which a regulation either discouraged an innovation or imposed significant costs in pursuing the innovation. It is also comparable to the experiences documented in an extensive literature on the effect of

¹³Established in 1997, Oregon's Green Permits program is designed to encourage facilities with strong environmental track records to achieve better environmental performance than required by law. In exchange for commitment to improved environmental performance through commitments such as adoption of environmental management systems, the program offers participating facilities cost savings and operational efficiencies through more flexible application of environmental requirements. In a May 2000 memorandum of agreement, EPA and the Oregon Department of Environmental Quality entered into a working partnership to proceed with the Green Permits Program.

prescriptive regulations on efforts to innovate. In summarizing part of this literature, the Environmental Law Institute (ELI) cited as a major problem the design of most regulatory standards under the Clean Water Act and Clean Air Act, which require EPA to establish technology-based discharge rate limits based on “available” or “feasible” emission control technologies.¹⁴ ELI noted that while alternative solutions are not specifically prohibited, such regulatory standards may preclude innovation in a number of ways, such as limiting permit writers to conservative choices and eliminating incentives for progress beyond established standards. ELI summarized the effect of prescriptive regulatory standards by noting that they “may severely limit innovation, creating higher costs than necessary.”

Officials in EPA’s regions and headquarters both cautioned that federal regulations are critical in ensuring reasonable consistency in the level of environmental protection afforded to individuals across the country. Several officials also noted that there is a “natural tension” between this goal and the goal of allowing states greater flexibility to address environmental problems in the way they believe best meets their needs. Overall, however, they generally concurred with the comments voiced by state officials concerning the effects of detailed, prescriptive regulations on environmental regulatory innovation. An official with EPA’s Office of Air and Radiation added that it is important to remember that the federal environmental protection system is about 30 years old and that many regulations in effect today were written before the relatively recent emphasis on developing more flexible innovative approaches.

EPA’s Culture

State officials indicated that a long-standing EPA culture that resists alternative approaches to environmental protection is viewed as one of the most significant obstacles to state environmental innovation. The importance of cultural factors was evident in our discussions of the factors affecting progress on specific innovative proposals. Of the 20 individual proposals that the states discussed, EPA culture was cited as either the first or second most important factor in 14 cases.

¹⁴Environmental Law Institute, *Innovation, Cost and Environmental Regulation: Perspectives on Business, Policy, and Legal Factors Affecting the Cost of Compliance*, May 1999. The Environmental Law Institute is a research and education center that seeks to develop effective solutions to pressing environmental problems.

Some state officials noted that such cultural resistance often manifests itself in a lengthy and time-consuming review and approval process. One EPA regional official referred to the numerous levels of review, the large number of EPA stakeholders, and the degree to which every detail of a proposal is examined as a “death by 1,000 cuts,” saying that after such a review process, it is often hard to keep the original concept or retain what is truly innovative.

Along these lines, an official in Massachusetts’ Department of Environmental Protection cited as an example the experience of a proposed addendum to its Project XL Agreement that established the state’s Environmental Results Program. The official said that EPA’s July 1999 response had included an extensive set of questions and comments that went well beyond what the state DEP had proposed, and was viewed by DEP staff as essentially asking the agency to justify the entire Environmental Results Program all over again. She added that DEP staff were frustrated not only by the volume of the questions posed, but also by the appearance that no one at EPA had been assigned to consolidate the numerous comments from various EPA offices. DEP’s reaction was to temporarily shelve the project, claiming that it did not have the resources to enter into protracted negotiations to resolve EPA’s concerns. According to the Commissioner, the subsequent intervention of the EPA Office of Enforcement and Compliance Assurance’s Policy Director helped to revive the proposal. Currently, DEP is awaiting EPA approval of a draft state rule containing the changes the state desires.

New Jersey officials cited similar experiences during negotiations over the state’s Gold Track program, stating that some EPA program staff strongly resisted requests for regulatory flexibility. One official noted that EPA staff had exhibited a “what if” mentality when reviewing proposals—developing a worst possible case scenario and holding that scenario up as a reason to reject the proposal. This official added that the EPA approach appeared to focus more on a search for reasons not to pursue innovation, rather than on an examination as to whether the proposal was fundamentally sound and how it could best be implemented.

EPA officials we interviewed also acknowledged the existence of an EPA culture predisposed to view innovative proposals skeptically. For example, an official of EPA’s Office of Solid Waste and Emergency Response noted that this cultural tendency is partly rooted in the fact that many EPA staff are used to addressing environmental problems in a “tried and true” way and that EPA’s reward system does not encourage staff to pursue

innovative approaches. Similarly, an official of EPA's Office of Air and Radiation noted that EPA has a culture somewhat resistant to new approaches, in part, because of its reluctance to deviate from approaches that it believes have proven effective over the last 30 years.

The agency recognized the challenge of promoting acceptance of new approaches on the part of its rank-and-file in our July 1997 report on its reinvention efforts, which documented widespread agreement among EPA officials, state officials, and others that the agency has a long way to go before reinvention becomes an integral part of its staff's every day activities.¹⁵ It cited the view of the then-head of EPA reinvention activities as noting that many staff are comfortable with traditional ways of doing business and consider their program-specific job responsibilities as their first priority and reinvention projects as secondary. Also commenting on EPA staffs' comfort with traditional approaches, a senior ECOS official noted that EPA was created in the early 1970s, and that many current employees have spent their entire careers there. He noted that for some of them, a familiarity and comfort with earlier norms and practices may make it hard to embrace some of the agency's recent experiments with alternative compliance strategies.

However, EPA officials indicated that what may be perceived as "cultural resistance" among EPA staff may, in fact, reflect understandable concerns that they properly implement the agency's core mission. An official with the agency's Office of Policy, Economics, and Innovation added that in some cases, EPA staff may feel that specific regulations were the culmination of a good faith commitment made to stakeholders and members of the public who participated in the regulatory development process. An official of EPA's New York office noted that EPA is obligated to ensure a certain level of environmental protection, and if proposed innovations could potentially negatively affect the environment, the benefits of moving forward must be carefully balanced against the risks. Another EPA official noted that close scrutiny is warranted in situations where an alternative approach may be viewed as setting a precedent for similar requests in situations where it may not be appropriate. An official of EPA's Chicago office also noted that to allow deviation from regulatory requirements, EPA must develop an alternative legal mechanism to ensure accountability. Developing such legal mechanisms can be very time

¹⁵*Environmental Protection: Challenges Facing EPA's Efforts to Reinvent Environmental Regulation (GAO/RCED-97-155*, July 2, 1997), p. 41.

consuming. Perhaps most importantly, EPA staff are mindful of the potential consequences when innovative proposals are at odds with laws or regulations. A state official said that EPA has to be cautious in permitting innovative approaches because the agency is often sued by environmental and community groups if it does not follow laws and regulations to the letter.

On the other hand, EPA and some state officials indicated that EPA's disinclination to consider alternative approaches may be slowly changing. Officials of the state environmental agencies in Massachusetts and New Hampshire indicated that EPA's Boston office has become a stronger advocate for flexibility and new approaches. For example, a Massachusetts official said the states in the region generally get a sympathetic hearing when they make proposals. The official also said that EPA's Office of Enforcement and Compliance Assurance has also become more willing to consider innovative approaches. Similarly, the New Hampshire official stated that EPA is gradually changing the mindset of its staff to be more open to innovative proposals and that there is a healthy and respectful working relationship between the state and the agency's Boston Office on these matters. Senior ECOS staff also told us that while further progress is needed, the agency has also sought to include state input earlier in its decision-making process to resolve long-standing data reporting problems and other key issues.

EPA Sometimes Determines That Proposals Are Missing Key Elements

While EPA officials acknowledged the key obstacles cited during our state interviews, they also told us that state innovative proposals sometimes encounter delays resulting from deficiencies in the form and content of the proposals. Project XL, the ECOS/EPA agreement, and other avenues for innovation each have certain ground rules on which participating parties agree. The EPA officials noted, and some state officials agreed, that in some cases a proposal's rejection or delay may have less to do with an obstacle encountered at the federal level than with a problem in the proposal's ability to meet these ground rules.

As noted earlier, for example, Project XL requires that proposed innovative approaches result in "superior environmental performance," in comparison to traditional approaches. According to EPA's Chicago office staff, the difficulty in documenting compliance with this criterion was a primary point of contention regarding the XL proposal made by the Andersen Windows corporation with backing by the state of Minnesota. Among other things, Andersen Windows desired to obtain flexibility to change

production processes without costly permit reviews under the Clean Air Act's Prevention of Significant Deterioration regulations. In exchange, the firm proposed to establish a per-unit volatile organic compounds emissions rate of 0.763 pounds per unit of production (referred to as the performance ratio). The performance ratio ensures that future capacity increases would use less polluting processes, such as the substitution of water-based wood finishes for the solvent-based wood finishes the facility had traditionally used. Also, the project would adopt an overall emissions cap of 2,651 tons of volatile organic compounds per year.

Although the proposed emission cap was above current actual emission levels, Andersen Windows contended that because it was below current *allowable* emissions, EPA should take into account the firm's past efforts to reduce VOC emissions. EPA, on the other hand, wanted the project to commit to a level of emissions no higher than current *actual* emissions. EPA contended that there was no plausible scenario under which the facility would have emitted at a level near the proposed cap, and thus the proposal did not constitute a commitment to superior environmental performance. In response, the facility made a number of concessions, including the performance ratio limit, a lower overall emissions cap, and an explicit, enforceable commitment that any new paint processes would use less polluting materials. After extensive negotiations, EPA agreed to the proposal.

The ECOS/EPA agreement also includes a series of principles to which signatories of proposals agree. Among them, proposals should include provisions for stakeholder involvement in a project, provisions for the enforcement of alternative regulatory requirements to ensure that public health and environmental protections are maintained, and a process for assessing the results of the innovative approach to test whether the desired results are actually achieved. Representatives of the Office of Enforcement and Compliance Assurance stated that state proposals do not always include an evaluation component, while others have not identified how stakeholder involvement would be assured. An official in EPA's Chicago office also noted that some ECOS proposals did not meet the requirement that they be sufficiently limited in scope that they may be considered "experimental," in order to minimize any risks if the initiative does not work as anticipated. For example, EPA initially resisted a Michigan proposal to take an innovative approach to controlling phosphorous discharges into state watersheds. Because the state initially proposed that this program be adopted in at least three watersheds and possibly statewide, EPA felt that its scope was not sufficiently limited to be

considered an experiment. The project was approved after Michigan agreed to limit the proposal to a single watershed.

Finally, project submittals may be subject to EPA's "compliance screening guidance." The guidance provides that participants in regulatory flexibility programs, such as Project XL and the EPA/ECOS agreement, have good overall compliance records. In particular, participation is deemed inappropriate if an applicant has been the subject of a recent criminal conviction, an ongoing criminal investigation, or ongoing EPA-initiated litigation. Participation may also be deemed inappropriate if an applicant has been involved in violations resulting in a serious threat to human health or the environment, a pattern of significant noncompliance, or is the subject of a citizen enforcement suit.

Such screening guidance became a central issue in a Project XL proposal submitted by the Hopewell Regional Wastewater Treatment Facility in Virginia. The facility receives industrial wastewater from a variety of manufacturers, including makers of pulp and paper, organic chemicals, and plastics. As a result of federal pretreatment regulations under the Clean Water Act, the contributing manufacturers were faced with the requirement to add redundant pretreatment technology. Adding the technology would have adversely affected treatment performance at the Hopewell plant. Consequently, the Hopewell Regional Wastewater Treatment Facility and contributing sources proposed to move the application of pretreatment standards from the industrial users to the Hopewell plant. An EPA Deputy Regional Administrator expressed EPA's support for the project and its desire to continue technical review of the proposal. However, the participation of two of the contributing firms was temporarily deferred pending the resolution of outstanding significant non-compliance at those facilities. The state subsequently resubmitted the proposal under the ECOS/EPA agreement. In July 2001, EPA indicated that the proposal could move forward to fuller development, but that the two firms with noncompliance issues could not participate until their enforcement cases were resolved.

Recent EPA Actions Are Intended to Facilitate State Innovative Approaches

EPA has recently taken a number of measures to address at least some of the obstacles discussed in this report, and those changes may foster an improved climate for pursuing innovative state approaches. In June 2001, EPA adopted the recommendations of its Task Force on Improving EPA Regulations. Subsequently, in October 2001, the agency published a draft strategy on Innovating for Better Environmental Results.

The EPA Task Force on Improving EPA regulations was created in April 2001 to reexamine EPA's regulatory development process and identify ways to improve supporting scientific, economic, and policy analysis. In addition, the task force sought ways to enhance regulatory flexibility and to create strong partnerships with states and businesses. Among other key findings, the task force determined that in the process of developing regulations, EPA should develop and consider a broader array of policy options, including innovative alternatives and market-based approaches. Importantly, the task force report recommended that the regulations development process consider the possibility of innovative alternatives and that EPA strengthen the involvement of states and local governments during the regulatory development process. Should EPA follow through on this recommendation, it would help the agency address one of the key obstacles identified in this report—the effect of prescriptive EPA regulations in impeding innovative regulatory strategies. By involving state officials early in the regulations development process and identifying the potential effects of regulatory proposals at this stage, there is a greater chance that regulations will be developed in a manner that encourages, rather than inhibits, innovation.¹⁶ The strategy, however, applies to the development of new regulations rather than the obstacles posed by existing regulations.

EPA's Draft Strategy on Innovating for Environmental Results maintains that EPA's efforts to promote innovation over the course of the last decade have made significant advances, but they have resulted in a disparate array of projects that were not designed to achieve system-wide improvement. Furthermore, it notes that the transaction costs have been high and that there has not been a consistent process for expanding the application of pilot programs. To address these issues, the strategy proposes a 4-pronged strategic framework:

- Strengthening EPA's partnership with states, including a greater emphasis on performance management and the NEPPS process.

¹⁶GAO recommended a similar approach in a report published earlier this year entitled, *Environmental Protection: EPA Should Strengthen Its Efforts to Measure and Encourage Pollution Prevention* (GAO-01-283, Feb. 2001). Specifically, the report recommended that EPA ensure that, as required by the Pollution Prevention Act of 1990, it reviews proposed regulations to determine their effect on the use of pollution prevention techniques.

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- Focusing on four priority issues: reducing greenhouse gases, reducing smog, restoring and maintaining water quality, and reducing the cost of water and water infrastructure.
 - Diversifying environmental tools and approaches.
 - Fostering a more innovative culture and organizational system at EPA and states.

Among other things, the strategy emphasizes fostering an organizational culture at EPA that is more friendly to innovative approaches. Following up on EPA reinvention activities of the last 10 years, it states that EPA should integrate support for innovation into its planning, budgeting, and organizational systems. It also notes that a more innovative culture will require EPA staff to view their jobs more broadly; that is, not just as overseers of ongoing operations, but as problem solvers, partners, and facilitators. It also proposes to hold senior managers accountable for supporting innovative approaches and increasing their responsibilities for scaling up successful innovations. According to EPA officials, the process of diffusion and broader application of successful innovations may lead to gradual revision of existing regulations that may be inhibiting better ways of achieving environmental goals.

The details of both EPA initiatives still need to be fleshed out and a number of issues resolved. For example, some state officials have questioned the focus of the Draft Strategy on Innovating for Environmental Results on four priority issues (greenhouse gases, smog, water quality, and water infrastructure), fearing that this focus downplays other issues of greater importance to individual states or localities. According to EPA, states will play a role in refining the Draft Strategy as it undergoes further development. How these and other issues are resolved will determine the ultimate impact these efforts have on EPA's reinvention efforts in general and on its efforts to collaborate with states on innovative environmental proposals in particular.

Conclusions

While states face a variety of obstacles when seeking to promote innovative approaches to environmental protection, we found their most significant obstacles to be at the federal level. Of these federal obstacles, the detailed requirements of prescriptive federal environmental regulations were cited as among the most significant, along with a cultural resistance among many EPA staff toward alternative approaches. In some cases, however, the underlying cause of this cultural resistance was traced back to the

regulations. Specifically, many EPA staff believe that strict interpretations must be applied to detailed regulations if they are to be legally defensible.

The identification by state officials of prescriptive federal regulations as a key obstacle to innovation is consistent with the findings of numerous research organizations that have cited the need for environmental regulations to focus more on the desired environmental results and, where possible, to be less prescriptive concerning the specific means of achieving these results. It is also consistent with EPA's recent adoption of the recommendations of its own Task Force on Improving EPA Regulations which advocates, among other things, that innovative alternatives should be considered as new regulations are developed.

It remains to be seen if implementation of the EPA recommendations will have the desired effect in reforming the regulations development process to better accommodate innovative proposals. Yet, however successful these efforts are in accounting for the impact of *new* regulations, they still do not focus on the key problem (documented by this report and by those of other organizations) concerning the impact of many *existing* prescriptive regulations on innovation, nor do other EPA initiatives resolve the problem. As noted in this report, current statutes are generally less prescriptive than the more detailed regulations by which they are implemented. However, the statutes contain no explicit language authorizing the use of innovative environmental approaches in lieu of specific regulatory requirements and, as noted in this report, this absence of a "safe legal harbor" for EPA has been a significant obstacle to states and others in their efforts to test innovative proposals. It has also tended to reinforce the cultural resistance to innovation that EPA is seeking to change. Accordingly, in the absence of legislative changes, the effectiveness of the agency's innovation efforts will warrant monitoring by EPA and other stakeholders in the innovations process, and will also warrant continued congressional attention.

Agency Comments

We provided a draft of this report for review and comment to EPA and to ECOS' headquarters office in Washington, D.C. EPA did not submit a formal letter but provided individual comments from several headquarters and regional offices that have dealt with the issues discussed in the report. From headquarters, we received comments from the Office of Air and Radiation, Office of Enforcement and Compliance Assurance, the Office of Solid Waste and Emergency Response, and the Office of Policy, Economics, and Innovation. The Office of Air and Radiation indicated general

agreement with the report's findings as did the Office of Enforcement and Compliance Assurance, which said that the report "reflects a balanced approach to analyzing such a broad topic and recognition of EPA's recent efforts to facilitate innovative approaches to environmental protection." The Office of Solid Waste and Emergency Response provided minor technical comments. Comments from all three offices were incorporated as appropriate.

The Office of Policy, Economics, and Innovation (OPEI) commented on our conclusion that its initiatives to alleviate the impacts of EPA regulations focused on *new* regulations rather than *existing* regulations. The Office said that the report should recognize that a major thrust of its Draft Strategy on Innovating for Environmental Results involves the "scaling up" or "diffusion" of successful innovations to broader applications through the revision of regulations, policies, or program practices. We added language to reflect this as a key component of the EPA strategy. However, as OPEI staff acknowledged in a subsequent discussion about this point, the agency has yet to pursue this strategy in the type of systematic or large-scale manner that would be needed to deal materially with the large number of EPA regulations at issue, and has not evaluated the extent to which scaling up has been practiced or has succeeded.

OPEI also observed that there may be some confusion in that the report identified two different ways in which statutes could inhibit state innovation: (1) by prescribing in detail how a program activity must be carried out (or by precluding alternatives) and (2) by omitting explicit language authorizing regulatory flexibility to proponents of innovation and regulators in a manner that would provide the "safe legal harbor" needed to assure the legality of their innovative proposals. The draft report discussed each of these potential impacts individually, but we added additional clarifying language in response to the OPEI comment. In addition to these two issues, OPEI offered a number of more detailed comments and suggestions, which we incorporated as appropriate.

We also received comments from EPA's Chicago, Dallas, New York, and Seattle offices. In addition to their technical comments and corrections, the Chicago, Dallas, and Seattle offices expressed general agreement with the material presented. The Dallas Office noted, for example, that "most of the views [identified in the report] have been expressed by state contacts or facility representatives, but also have been shared by individual EPA employees that have worked on one or more innovations programs." The New York Office provided no overall opinion, but offered a number of

technical comments and corrections. These comments and corrections, and those of the other three regional offices, were incorporated as appropriate.

ECOS's Executive Director and his staff said that the draft report was fair and well documented. They noted in particular their agreement with the report's findings that EPA regulations tend to be more of an obstacle to innovation than their underlying environmental statutes, and that a continued need exists for cultural change at both the state and EPA level. They also proposed a number of technical revisions and clarifications, which we incorporated in finalizing the report.

Objectives, Scope, and Methodology

To identify the major avenues through which states can achieve concurrence with EPA on innovative approaches to environmental protection, we interviewed officials with EPA's headquarters and regional offices, officials from the Environmental Council of the States, and officials from other interest groups and research organizations. We also reviewed recent studies and other literature pertaining to states' experience with innovative environmental regulatory strategies.

To obtain information on the obstacles that states face when adopting innovative approaches to environmental protection, we interviewed cognizant officials from 15 states—Georgia, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, and Wisconsin. We intentionally selected a sample of states that was diverse in size, was representative of different EPA regions, and had varying degrees of experience with environmental regulatory innovation. To obtain further diversity in the initiatives we examined, we asked the state officials to identify two of their major innovative proposals—one that they pursued and EPA accepted and one that was proposed and not accepted. For each, we first sought written information in advance of our interviews with cognizant state officials. Then, through our interviews with these officials, we sought to obtain a fuller understanding of the circumstances surrounding each initiative, and to identify the obstacles that may have inhibited or prevented progress. For the states in which officials elected not to identify initiatives pursued with EPA, we sought to identify the factors influencing their reasons for not doing so.

In addition to these state interviews, we conducted a series of interviews with the corresponding EPA regional offices to obtain their views about the

obstacles to state environmental innovation in general and to gather information about their experiences with the specific initiatives identified by states in their jurisdiction. We also interviewed officials with EPA headquarters offices including the Office of Policy, Economics, and Innovation; the Office of Enforcement and Compliance Assurance; and key program offices that have had experiences with innovative state regulatory proposals.

We conducted our work from March through December 2001 in accordance with generally accepted government auditing standards.

As we agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution of it until 30 days from the date of this letter. We will then send copies to others who are interested and make copies available to others who request them. If you or your staff have any questions about this report, please call me or Steve Elstein at (202) 512-3841. Key contributors to this report are listed in appendix II.

David G. Wood

David G. Wood
Director, Natural Resources
and Environment

Key Innovations Identified by States

State ^a	Description of innovations cited by state officials
Massachusetts	
Cathode ray tube (CRT) recycling	Cathode ray tubes in computer equipment are a growing waste problem because of the high turnover rates for computer equipment. The Massachusetts Department of Environmental Protection wanted to create a system for reusing and recycling these parts, but ran into difficulties because the parts are classified as hazardous waste under the Resource Conservation and Recovery Act (RCRA) due to their high lead content. The state undertook a number of actions, including exempting intact CRTs as hazardous waste, to increase reuse and recycling efforts in the state.
Environmental Results Program	The Environmental Results Program is a regulatory system established under Project XL designed to streamline permitting and reporting requirements and improve performance in the printing, photo processing, and dry cleaning sectors. The state sets out to accomplish this through the use of industry-wide performance standards and self-certification of compliance. In the future, Massachusetts would like to expand this program to other industrial sectors.
Michigan	
TMDL for Lake Allegan Watershed	Under this ECOS agreement project, the Michigan Department of Environmental Quality (MDEQ) adopted a new watershed approach to meet TMDL requirements for phosphorus in the Lake Allegan Watershed. This new approach utilizes a cooperative agreement between point source dischargers, non-point dischargers, and the MDEQ to establish the necessary reduction allocations among the various sources. The resulting allocation for the point source dischargers will then be written into the next round of National Pollution Discharge Elimination System permits.
Development of a presumptive BACT for auto assembly plants	The Clean Air Act requires a case-by-case Best Available Control Technology (BACT) analysis for auto assembly plant painting and coating operations. Whenever a facility makes any changes to its technology, it must go through this time-consuming process, even though the BACT is typically the same in each case. With this ECOS agreement, the Michigan Department of Environmental Quality will test an innovative permitting approach under which a 3 year BACT analysis will be developed for specific automotive painting and coating sources. For a 3 year period, an auto assembly facility will be able to use this 3 year BACT in lieu of performing a completely new analysis. This new approach will save resources, which can then be used for other activities with greater environmental benefits.
Minnesota	
Andersen Windows	Under this Project XL agreement, the Andersen Window Corporation is testing a new approach to reducing air emissions through the use of a performance ratio. This ratio will measure the amount of volatile organic compound (VOC) emissions per unit of production. The facility can make changes to its processes as long as it stays below the performance ratio and the facility-wide VOC cap. This performance-based system will give the facility flexibility and provide an incentive for improved environmental performance.
Project XL proposal for 3M	The 3M Hutchinson plant was one of the original participants in Project XL. The company's proposal sought to develop a multimedia permit that would cover the facility's air emissions, storm water management, liquid storage facility requirements, and hazardous waste generator requirements. In exchange, 3M would commit to a number of requirements intended to enhance the facility's environmental performance. Eventually, this proposal was withdrawn from Project XL.

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Key Innovations Identified by States

(Continued From Previous Page)

State ^a	Description of innovations cited by state officials
New Hampshire	
Groveton Paper Mill	In April 2002, Groveton Paper Board, Inc. would have been required to install a \$1 million system to capture and incinerate emissions of airborne methanol. The company found an alternative pollution control technology that has the potential to cut methanol emissions by four times what is required by law, while saving the company \$825,000. In addition, the new technology will reduce 20 tons per year of other hazardous air pollutants.
Management of Inactive Asbestos Disposal Sites in Nashua and Hudson, New Hampshire	Over 250 sites in Nashua and Hudson, New Hampshire were contaminated with asbestos when a local asbestos manufacturing plant delivered asbestos to landowners to use as fill. EPA determined that these sites qualified as “inactive disposal sites” and “stationary sources” under the National Emission Standards for Hazardous Waste Pollutants (NESHAPS). As a result, the sites were subject to a number of requirements, many of which were unreasonable for homeowners. The New Hampshire Department of Environmental Services worked with EPA to find a reasonable solution. Eventually, they used a mechanism in 40 CFR 63.93 that allows a state rule to be substituted for the federal regulation. In September, they provided a draft proposal to EPA, and currently they are working with EPA for a resolution.
New Jersey	
Gold Track	The Gold Track Program is a Project XL initiative. It is part of a tiered system that is designed to reward companies that commit to higher levels of environmental performance. The Gold Track is the highest tier in the system and it provides recognition and regulatory flexibility for facilities that commit to the highest standards of environmental performance.
New York	
Project XL proposal for IBM Fishkill facility	The IBM Fishkill facility is a manufacturer of semiconductor and electronic computing equipment. The facility’s wastewater sludge is classified as hazardous waste under the Resources Conservation and Recovery Act. The facility would like to test an alternative approach that involves recycling this waste for reuse in cement. Under Project XL, EPA has decided to grant regulatory flexibility to the facility to recycle the sludge.
Project XL proposal for storage of hazardous waste by public utilities	Under RCRA, generators of hazardous waste must transport their waste to permitted treatment, storage, and disposal facilities. Under this agreement, public utilities in New York State will be able to consolidate the waste from remote locations at a central collection facility and store it there for up to 90 days before transporting it to one of these facilities. This project is intended to increase public safety by facilitating removal of hazardous waste and decreasing the risk of accidental release; to increase efficiency of transportation of hazardous wastes for public utilities; and to save time and resources for public utilities and the New York Department of Environmental Conservation.

Appendix I
Key Innovations Identified by States

(Continued From Previous Page)

State ^a	Description of innovations cited by state officials
Oregon	
Green Permits	Established by state legislation, the Green Permits Program is designed to encourage facilities to achieve greater environmental performance than required by law, and to adopt environmental management systems in exchange for incentives such as regulatory flexibility, public recognition, and a single point of contact with the agency. EPA's involvement is spelled out in a memorandum of agreement (MOA) between the Oregon Department of Environmental Quality, the Lane Regional Air Pollution Authority, and EPA. The MOA is based on the principles of the Joint State/EPA Agreement to Pursue Regulatory Innovation. Currently seven facilities are participating in the program.
Green Permit for LSI Logic	LSI Logic is a semiconductor facility in Gresham, Oregon, that participates in the Green Permits Program. Among other things, the facility's Green Permits Application requests equivalency under Subpart BB of the Resource Conservation and Recovery Act, which is related to monitoring, detection, and repair of leaks from equipment that handles hazardous waste. LSI Logic contends that its equipment, while not meeting the exact requirements of the regulations, performs in a manner that is equal or superior to the technology that is required. EPA and the state have preliminarily determined that the firm's approach is acceptable, and the parties are now in the process of identifying a legally-enforceable alternative for the facility, such as a site-specific rule.
Pennsylvania	
Acid Mine Reclamation	This Project XL program is designed to encourage coal miners to remine and reclaim abandoned coal mine sites. Under current regulations, operators must meet numeric limits under the National Pollutant Discharge Elimination System (NPDES) at individual discharge points. Operators may be reluctant to engage in remining activities because they may exceed these limits because of pre-existing discharges from closed mines. Under this project, operators can use Best Management Practices and monitor the concentration of pollutants in-stream, which is expected to reduce risk and expense to coal mine operators, improve water quality, and increase the number of operators participating in remining and reclamation activities.
Lucent Technologies Project XL	The Lucent Technologies Microelectronics Group entered into a Project XL Agreement with EPA that is designed to test whether an environmental management system (EMS) could be used to develop a single document to cover all environmental aspects of a regulated entity that has demonstrated superior environmental performance. It will also explore, among other things, whether it is appropriate to use an EMS as a basis for granting regulatory flexibility and if there are regulatory approaches that are cheaper, cleaner, and smarter ways of protecting the environment.
Texas	
Transportation Equipment Cleaning Partnership	Established under the Joint EPA/State Agreement to Pursue Regulatory Innovation, this initiative seeks to allow "barge scale" (iron oxide) material produced during the barge-cleaning process as a marketable product. Currently classified as either industrial or hazardous waste, the material is transported and treated at an off-site RCRA facility, with any remaining residue placed in an authorized landfill. Under this agreement, the participating facility would use its onsite thermal oxidizer to convert the material for use as a product. This project is expected to result in reduced risk for exposure to hazardous materials for employees, the public, and the environment and in resource savings for the participant.

Appendix I
Key Innovations Identified by States

(Continued From Previous Page)

State ^a	Description of innovations cited by state officials
Virginia	
Project XL for Merck Stonewall Plant	The Merck Stonewall plant is located near the Shenandoah National Park in Virginia—an area of special concern for air quality. Merck was one of the first participants in Project XL and its proposal was designed to improve air quality in the area. Under the agreement, Merck agreed to convert its coal-burning powerhouse to burn natural gas, resulting in lower levels of emissions. In exchange for this commitment, the facility would be allowed to function under an emissions cap for criteria pollutants, allowing Merck to make process changes without first obtaining EPA approval.
Hopewell Regional Wastewater Treatment Facility	This proposal, submitted under the Joint State/EPA Agreement to Pursue Regulatory Innovation, seeks EPA's approval for a modification of pretreatment requirements for the Hopewell Regional Wastewater Treatment Facility under the Clean Water Act. The facility treats wastewater from a number of industrial facilities and current regulations require that standards for water quality must be met at the industrial users' end-of-pipe. The standards were designed for treatment facilities that treat domestic wastewater and because the facility only treats industrial wastewater, the Hopewell Wastewater Treatment Facility would like these requirements modified to allow it to meet the standards at its own end-of-pipe, thus eliminating redundant treatment processes and resulting in improved quality in the receiving stream.
Wisconsin	
Environmental Cooperative Agreement for the Wisconsin Electric Power Company	The Environmental Cooperation Pilot Program (ECP) was developed by the Wisconsin Department of Natural Resources to allow facilities to test innovative approaches to environmental protection in exchange for superior environmental performance. Through the program, which is supported by the Wisconsin statute, the DNR is authorized to enter into agreements with up to 10 different facilities in the state. The Pleasant Prairie Power Plant is one of the participating facilities. Under the agreement, the facility commits to a number of measures, including the use of pollution prevention techniques and the adoption of an environmental management system. In exchange, the facility will enjoy the benefits of alternative monitoring, reduced reporting, permit streamlining and recovery and combustion of ash stored in the company's landfills.
Project XL proposal for the Wisconsin Electric Power Company	The Project XL proposal for Wisconsin Electric Power Company was designed to create an integrated, multi-pollutant air quality approach for all six of the company's coal burning power plants. Under the agreement, Wisconsin Electric would meet certain limits for sulfur dioxide, nitrogen oxides, and particulate matter that are more stringent than current requirements. In exchange for this, Wisconsin Electric would be granted flexibility in making certain changes at the facilities. Specifically, it would be exempt from some of the requirements for New Source Review, Prevention of Significant Deterioration and New Source Performance Standards if the changes meet certain qualifications. This agreement was expected to give Wisconsin Electric incentive to make improvements to the system and to result in lower emissions, while resulting in cost savings due to paperwork reduction and efficiency gains for Wisconsin Electric and Wisconsin Department of Natural Resources. To date, EPA has not approved this proposal.

^aGeorgia, Nebraska, Tennessee, and Washington also participated in interviews, but they did not identify an innovation that they proposed to EPA.

GAO Contact and Staff Acknowledgments

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Staff Acknowledgments	In addition to the individual named above, Mike Hartnett and Stephanie Luehr contributed significantly to this report. Kimberly Clark, Karen Keegan, and Jonathan McMurray also made significant contributions.

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